IN THE CLAIMS

Cancel claims 1-41 without prejudice

42. (original) An optical code detector for detecting an information code from an optical signal carried on an optic fiber, the optical signal having a header portion containing the information code encoded with different levels of light and a data portion, the optical code decoder comprising:

a plurality of optical storage devices coupled to the optical fiber, each of which stores a segment of the information code and emitting the light encoding the segment;

an optical detector unit for each segment of the information code, each of the optical detector units being exposed to the segment light and each having:

a first photo detector having an anode and a cathode;

a second photo detector having an anode, a cathode, the anode of the second photo detector being coupled to the cathode of the first photo detector, and the cathode of the second photo detector being coupled to the anode of the first photo detector; and

a light emitter array optically coupled to the optical detector units.

43. (original) The optical code detector of claim 42 wherein the first photo detector is coupled to a first reverse bias element and the second photo detector is coupled to a second reverse bias element.

44. (original) The optical code detector of claim 42 wherein the information code further includes a series of one and zero bits, the one bits being coded by an amplified light signal and the zero bits being coded by maintaining the light signal at a low level.

45. (original) The optical code detector of claim 42 wherein each detector unit has an input terminal corresponding to the cathode of the first photo detector and an output terminal corresponding to the anode of the second photo detector and each detector unit is coupled in series to each other via the input and output terminals.

46. (original) The optical code detector of claim 42 wherein the photo detectors are integrated circuits fabricated from group IV elements.

47. (original) The optical code detector of claim 42 wherein the photo detectors are integrated circuits fabricated from group III-V elements.

48. (original) The optical code detector of claim 44 wherein the optical storage devices further include:

a plurality of fiber optic conversion loops, each loop corresponding to a bit of the information code;

a tap fiber; and

an optical amplifier having an input coupled to the tap fiber and an output coupled to the first photo detector.

49. (original) The optical code detector of claim 48 wherein the presence of a matching information code is indicated by a zero voltage output from the detector units.

50. (original) The optical data detector of claim 48 wherein the light emitter array has a plurality of light sources, each light source being coupled to the second photo detector, the light sources emitting a pattern of light indicative of a selected code with a high light level representing a one bit in the code and a low light level representing a zero bit in the code; wherein the detector units detect either a one bit or a zero bit,

the first photo detector of the one bit detector units being a NiP photodiode coupled to the output of the optical amplifier and the second photo detector of the one bit detector units being a PiN photodiode; and

the first photo detector of the zero bit detector units being a PiN photodiode coupled to the output of the optical amplifier and the second photo detector of the one bit detector units being a NiP photodiode.

51. (original) The optical data detector of claim 48 wherein the light emitter array is a pattern generator having a memory storing the possible iterations of the information data and generates an output signal representing a one bit or a zero bit for each bit of each of the iterations of the information data.

52. (original) The optical data detector of claim 51 wherein the first photo detector is a NiP photo detector and the second photo detector is a PiN photo detector, and the detector further comprises:

a first switch fabric for each detector unit having an input coupled to the output of the optical amplifier, an optical conduit coupled to the first photo detector and a second optical conduit coupled to the second photo detector;

a laser source;

a second switch fabric for each detector unit having an input coupled to the output signal of the pattern generator and the laser source, an optical conduit coupled to the second photo detector and a first optical conduit coupled to the first photo detector; and

wherein the first and second switch fabrics divert the output of the laser source to the first photo detector and the output of the storage device to the second photo detector when the output signal represents a zero bit; and

wherein the first and second switch fabrics divert the output of the laser source to the second photo detector and the output of the storage device to the first photo detector when the output signal represents a one bit.

53. (original) The optical code detector of claim 52 wherein the storage devices further comprise an optical latch coupled to the output of the optical amplifier, the optical latch having a first set of semiconductor optical amplifiers coupled to the output of the optical amplifier and an output;

a second set of semiconductor optical amplifiers having an input coupled to the laser source and an input coupled to the output of the first set of semiconductor optical amplifiers; and

wherein when the input to the optical amplifier is a high signal, the output of the light source is output from the second set of semiconductor optical amplifiers and when the input to

the optical amplifier is a low signal, a low signal is output from the second set of semiconductor optical amplifiers.

54. (original) The optical code detector of claim 53 further comprising a reset line coupled to the input of the first set of semiconductor optical amplifiers, wherein a high signal on the reset lines prevents the input from the optical amplifier.

55. (original) The optical code detector of claim 42 wherein the header portion has a second information code and the detector further comprising:

an optical detector unit for each segment of the second information code, each of the optical detector units being exposed to the segment light and each having:

a first photo detector having an anode and a cathode;

a second photo detector having an anode, a cathode, the anode of the first photo detector being coupled to the cathode of the second photo detector, and the cathode of the first photo detector being coupled to the anode of the second photo detector; and

a light emitter array optically coupled to the optical detector units wherein the presence of a matching second information code is indicated by a zero voltage output from the detector units.

56. (original) The optical code detector of claim 53 further comprising a second code detector array coupled to the optical fiber which detects the information code;

a router coupled to the optical fiber;

wherein the second code detector array and the router is coupled to the processor, wherein the first information code is a start code which is detected by the processor and which sends a command signal to the router to route the signal.

57. (original) A method for decoding information code in an optical data transmission system having a light modulated data signal having a data portion and a header containing the information code, the method comprising the steps of:

carrying the light signal on a fiber optic cable;

separating the information code in the header into discrete light segments;

comparing the discrete light segments to a predetermined pattern; and

indicating a match when the predetermined pattern is the same as the discrete light segment.

58. (original) The method of claim 57 further comprising the step of storing the light segment for a sufficient period of time to compare all the possible iterations of the predetermined pattern.

59. (original) The method of claim 57 further comprising the step of amplifying the discrete light segment to a sufficient level to provide illumination sufficient to compare all the possible iterations of the predetermined pattern.

60. (original) The method of claim 57 wherein the discrete light segment represents a bit having a one or zero value.

61. (original) The method of claim 60 wherein the information code further includes a series of one and zero bits, the one bits being coded by amplifying the light signal and the zero bits being coded by maintaining the light signal at a low level.

62. (original) The method of claim 57 further comprising the steps of:

determining whether a predetermined pattern matches the information code; and

routing the light signal according to the information code on a second optic fiber.

63. (original) The method of claim 57 further comprising the steps of:

providing a second information code in the header portion;

separating the second information code into discrete light segments;

comparing the discrete light segments to a second predetermined pattern; and

indicating a match when the predetermined pattern is the same as the discrete light segment.

64. (original) The method of claim 57 wherein the step of comparing further includes:

exposing the light segment to a first photo detector having an anode and a cathode;

providing a second photo detector having an anode, a cathode, the anode of the second photo detector being coupled to the cathode of the first photo detector, and cathode of the second photo detector being coupled to the anode of the first photo detector;

wherein the step of generating a predetermined pattern includes emitting a light level representative of a desired code, and exposing the light level to the second photo detector;

determining if there is a zero output from the first and second photo detector indicating a match.

Cancel claims 65-77 without prejudice.